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PATENT  
Docket No. JCLA12519  
page 1

**UNITED STATE PATENT AND TRADEMARK OFFICE**

In re application of :

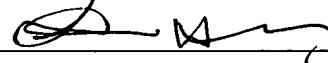
Application No. : 10/734,948  
Filed : December 11,2003  
For : NON-AZEOTROPIC REFRIGERANT  
MIXTURE, REFRIGERATING CYCLE  
AND REFRIGERATING DEVICE  
Examiner : LEUNG, RICHARD L.  
Art Unit : 3744

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August 25, 2005

(Date)

  
Jiawei Huang, Reg. No. 43,330

**TRANSMITTAL OF APPEAL BRIEF**

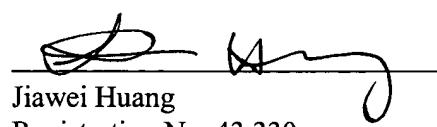
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Sir:

Transmitted herewith is a Reply Brief in SIX ( 6 ) pages in triplicate.

Also enclosed are:

(X) Return prepaid postcard.  
(X) The Commissioner is authorized to charge any additional fees required, including any required time extension fee, to Deposit Account No. 50-0710 (Order No. JCLA12519). A duplicate copy of this sheet is enclosed.

  
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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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Ex Parte ICHIRO KAMIMURA et al.

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Application for Patent

Filed: Dec. 11, 20003

Serial No.: 10/734,948

Group Art Unit 3744

Examiner LEUMG, Richard L

For:

NON-AZEOTROPIC REFRIGERANT MIXTURE, REFRIGERANTING  
CYCLE AND REFRIGERATING DEVICE

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**REPLY BRIEF**

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J. C. PATENTS  
Agents for Applicants

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## 1. INTRODUCTION

This Reply Brief is in response to the Examiner's Answer mailed June 29, 2005. Under 37 C.F.R. §1.193(b), it is believed that the Examiner's Answer has raised new points of argument, and that this Reply Brief is therefore proper.

## 2. THE EXAMINER'S ANSWER HAS RAISED NEW POINTS OF ARGUMENT

The Examiner's Answer raises new arguments regarding prior art references Radermacher et al. (hereinafter Radermacher), Richard et al. (hereinafter Richard), Karl, and Vander Woude et al. (hereinafter Vander).

### 2.1. The Examiner sustains the rejections.

With respect to claims 1-3, Examiner emphasizes that the present invention has used the same composition for the refrigerant mixtures of Richard. Examiner then considers the use of "refrigeration area" and "cold storage area" based on glide temperature is just an intended use.

With respect to claims 4-8, Examiner states that claims 4-8, depending on claim 1, are directed to the "refrigerating cycles". However, Examiner sustains rejections because the prior art has disclosed the "refrigerating cycles", and the use of "refrigeration area" and "cold storage area" based on glide temperature is just an intended use.

### 2.2 Appellant's Arguments

(a) With respect to claims 1-3, Richard does not anticipate claims 1-3 for at least the reasons as follows.

In the present invention, Applicant has investigated the effect of the carbon dioxide in the combustible refrigerant (see FIG. 1 and FIG. 2), so as to produce the

available temperature glide in use for setting up the “refrigeration area” and “cold storage area”.

For example in Table 1, the temperature glide can have the range of 25.6°C when the carbon dioxide is in 50% ratio. This means that the temperature range from the “temperature of saturated gas” to the “temperature at outlet” can cross over an amount of 25.6°C as the temperature glide. Due to this range of temperature glide, the temperature at the refrigeration area can be, for example, maintained at -18°C, and the temperature at the cold storage area can be, for example, maintained at 5°C.

In other words, the present invention proposes the refrigerant with carbon dioxide, so as to produce the sufficient temperature glide for use in the refrigeration area and the cold storage area.

In re Richard, even though some possibilities of compositions for the refrigerant are disclosed, the effect of mixing ratio of carbon oxide, as shown in FIG. 1 and FIG. 2, is not considered, so as to produce the available temperature glide for use in the refrigeration area and the cold storage area.

Indeed, Richard does not specifically suggest using the temperature glide in practical application (col. 2, lines 217-19). In other words, the temperature glide is not expected by Richard to produce the significantly results. Richard indeed never anticipates the arrangement of “refrigeration area” and “cold storage area” based on the temperature glide, and therefore never anticipates the present invention as recited in claims 1-3 about the arrangement of “refrigeration area” and “cold storage area” based on the temperature glide,

As discussed above, the arrangement of “refrigeration area” and “cold storage area” based on the temperature glide is not just the intended use from Richard.

Richard is in negative position about using the temperature glide and fails to take consideration of the mixing ratio of the carbon oxide, so as to produce the sufficient temperature glide. The present invention has investigated the property of temperature glide, and proposes, in novelty, that the carbon oxide in mix with the refrigerant can produce the available temperature glide for specifically use in “refrigeration area” and “cold storage area”. This is not just the intended use as stated by the Examiner.

The rejection under 35 U.S.C. 102(b) is improper.

(b) With respect to claims 4-8, the claimed inventions are directed to the “refrigerating cycle” and “refrigerating device” even though the refrigerant mixture as recited in claim 1 is used. This temperature glide is used to produce the specific temperature ranges for the refrigeration area and the cold storage area in operation. However, in order to have sufficient temperature glide in use to produce the “refrigeration area” and “cold storage area”, the refrigerant mixture as recited in claim 1 is used. The mechanism of claims 4-8 is based on the novel design based the “temperature glide”. The refrigerant mixture is further used to produce the temperature glide.

In other words, the prior art references do not teach or suggest to use the temperature glide for producing the temperature glide ranges, which is actually used for “*the refrigeration area*” and “*the cold storage area*” in design the “refrigerating cycle” and “refrigerating device”. When considering the present invention as a whole, claims 4-8 independently defines the “refrigerating cycle” and “refrigerating device” over the prior art references.

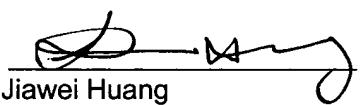
3. CONCLUSION

For at least the foregoing reasons, it is believed that all the pending claims 1-8 of the invention patentably define over the prior art and are in proper condition for allowance.

Respectfully submitted,  
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Date: 8/25/2005

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